DETAILED ACTION

1. This office action is in response to the amendment filed 24 September 2008. Claims 1 and 13 have been amended. Claims 3, 5-8 and 10 have been withdrawn from consideration. Claims 1, 2, 4, 9, 11-14 are finally rejected for reasons necessitated by applicant's amendment and for reasons of record.

Response to Amendment

2. The Declaration from Robin J. Guthrie under 37 CFR 1.132 filed 24 September 2008 is sufficient to overcome the rejection of claim2 based upon the rejection under 35 U.S.C. 102(b). The fuel does not have a manifold that is in fluid communication with all of the cells. Since a manifold has been defined as being downstream of the baffle in claim 2 whereas in Ketchman et al. the fuel flows from pipe 36 through the perforated pipe and into a chamber which then leads to the individual cells.

3. The Declaration from Gregory Reynolds under 37 CFR 1.132 filed 24 September 2008 is sufficient to overcome the rejection of claims 1 and 14 under 35 U.S.C. 112 second paragraph because applicant has defined down stream to mean in the radial direction of the fuel.

4. The Declaration from Gregory Reynolds under 37 CFR 1.132 filed 24 September 2008 is sufficient to overcome the rejection of claim 2 based upon the rejection under 35 U.S.C. 102(b) by Ketchman et al as set forth in the last Office action because as is previously discussed above.

Claim Rejections - 35 USC § 102

5. The claim rejections under 35 U.S.C. 102(b) as anticipated by Ketchman et al. are withdrawn for claims 2, 4, 9 and 12.

Claim Rejections - 35 USC § 103

6. The claim rejection under 35 U.S.C. 103(a) and Sawyer on claims 1, 13 and 14 are withdrawn because the claim has been amended and the definition of downstream has been entered to mean radially out of the pipe.

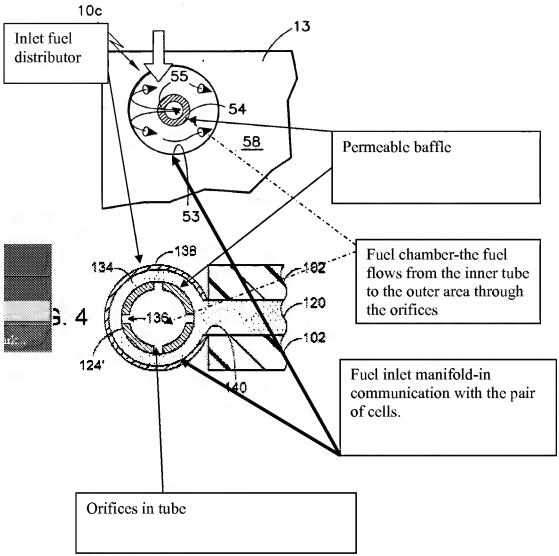
Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 2, 4, 9 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Lui et al. (US 2004/0058220 A1).

As to claims 2 and 4, Lui et al. discloses a fuel cell system comprising a pair of cells (Paragraph 26). Each of the cells will inherently have a fuel flow field and a fuel inlet and a fuel supply pipe. (See Figures below for a comparison match between applicants figure of the elected specie and Lui et al. figure)



As to claim 9, Lui et al. includes the manifold as is shown above. As the fuel enters area (136), the fuel will imping on the surface of the baffle thereby changing the direction of the flow of the fuel causing the fuel to become uniform.

As to claim 12, the fuel inlet distributor comprises a first internal manifold receiving fuel from the fuel supply pipe (area 136) a second internal fuel manifold (area 134) providing fuel to

the fuel inlets and receiving fuel through the permeable baffle from the first internal fuel manifold (figure above).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

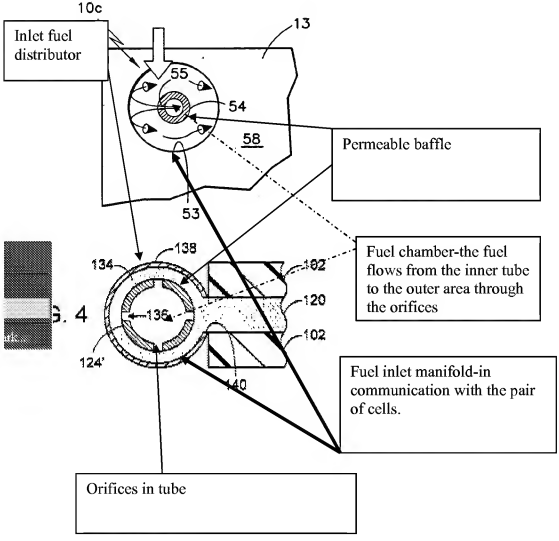
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lui et al. (US 2004/0058220 A1).

Lui et al. discloses the fuel cell as discussed above and incorporated herein but fails to taper the permeable baffle, to have the inlet end have a larger opening than the outlet end, in order to increase the pressure of the fuel as it travels in the tube it is well known in the art to narrow the tube a nozzle is formed which will increase the pressure at the outlet compared to the pressure at the inlet. It would have been obvious to one of ordinary skill at the time of the invention to taper the baffle in this manner so as to increase the pressure of the fuel toward the outlet where the amount of fuel is less than at the beginning thus insuring an equalized amount of fuel entering the fuel distributor.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lui et al. (US 2004/0058220 A1 in view of Reiser et al. (US 2002/0076582 A1).

As to claim 14, Lui et al. disclose a plurality of fuel cells, each of the fuel cells have at least one fuel flow field and a fuel inlet and fuel outlet. Each of the cells will inherently have a fuel flow field and a fuel inlet and a fuel supply pipe. (See Figures below for a comparison match between applicants figure of the elected specie and Lui et al. figure)



Lui et al. fails to disclose a recycle loop, an exhaust valve or a controller.

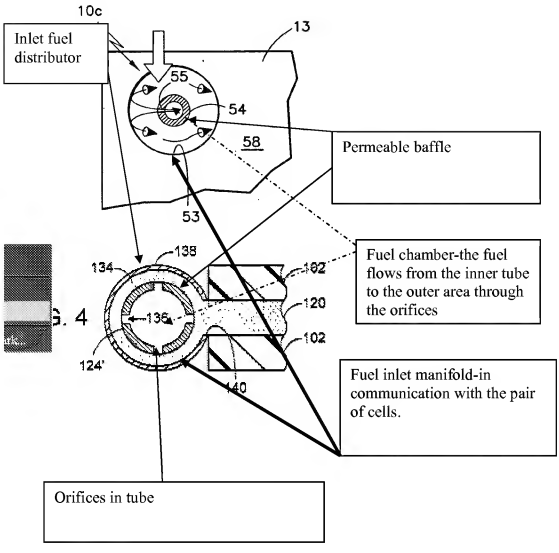
Reiser et al. discloses a fuel cell system and teach the use of a recycle loop for the anode exhaust (150) in order to recycle the fuel.

However Lui modified by Reiser fail to disclose the recycled fuel is provided down stream of the permeable baffle.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replenish the fuel in the system because it would save the fuel from being expended. Furthermore the placement of the fuel downstream of the baffle would allow the recycled fuel to enter the cells directly and would further mix with the fuel entering from the orifices thus homogenizing the fuel entering the cells.

12. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lui et al. (US 2004/0058220 A1 in view of Reiser et al. (US 2002/0076582 A1) and LaPierre et al. (US 6,348,278.

As to claim 1 and 13, Lui et al. disclose a plurality of fuel cells, each of the fuel cells have at least one fuel flow field and a fuel inlet and fuel outlet. Each of the cells will inherently have a fuel flow field and a fuel inlet and a fuel supply pipe. (See Figures below for a comparison match between applicants figure of the elected specie and Lui et al. figure)



Lui et al. fails to disclose a recycle loop, an exhaust valve or a controller.

Reiser et al. discloses a fuel cell system and teach the use of a recycle loop for the anode exhaust (150) in order to recycle the fuel.

However Lui modified by Reiser fail to disclose the recycled fuel is provided down stream of the permeable baffle.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replenish the fuel in the system because it would save the fuel from being expended. Furthermore the placement of the fuel downstream of the baffle would allow the recycled fuel to enter the cells directly and would further mix with the fuel entering from the orifices thus homogenizing the fuel entering the cells.

Reiser further discloses a valve (170) which is in fluid communication with the cells and is upstream from the manifold inlet. Since the valve is downstream of the exiting gas it will be located a distance from the interconnection of the fuel inlet chamber and the supply pipe. It would have been obvious to one of ordinary skill in the art to include a valve in the recycle system in order to control the amount of fuel being recycled.

Lui et al. modified by Reiser fail to disclose a controller controlling the valve. LaPierre et al. disclose a controller (150) for controlling the valves during start up.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the controller of LaPierre et al. to the system of Lui modified by Reiser because the controller can adjust the valve to control the flow rate of the fuel (col. 17 lines 57- col. 18 line 5).

Response to Arguments

13. Applicant's arguments in combination with declarations, see page 7 of remarks, filed 24 September 2008, with respect to the rejection(s) of claim(s) 2 under 35 U.S.C. 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA J. LAIOS whose telephone number is (571)272-9808. The examiner can normally be reached on Monday - Thursday 10 am -7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795